

1. Water-sensing and protection apparatus configured for use with a water-
utilization device such as a washing machine, dishwasher or other appliance having a first
plug for making connection to a first electrical outlet, the apparatus comprising:
 - a plurality of water sensors, each operative to close an electrical circuit in the
presence of water;
 - a second plug for making connection to the first electrical outlet;
 - a second outlet for receiving the first plug of the water-utilization device; and
 - an enclosure containing electrical circuitry, including:
 - an electrically operated switch in an electrical path between the second
plug and the second outlet, and
 - electrical components interfaced to the water sensors causing the
electrically operated switch to open the electrical path between the second plug
and the second outlet in the event that a water sensor detects the presence of
water.
2. The water-sensing and protection apparatus of claim 1, wherein one of the
water sensors is contained in a flattened housing for detecting the presence of water on a
floor.
3. The water-sensing and protection apparatus of claim 1, further including a
vibration sensor causing the electrically operated switch to open the electrical path
between the second plug and the second outlet in the event that excessive vibration is
detected by the sensor.
4. The water-sensing and protection apparatus of claim 3, wherein the
vibration sensor includes two electrodes extending into a sealed cavity containing a slug
of mercury or other electrically conductive liquid.

2 5. The water-sensing and protection apparatus of claim 3, wherein the
vibration sensor includes a body having an adhesive or magnetic material enabling it to
be attached to and oriented on an appliance.

2 6. The water-sensing and protection apparatus of claim 1, wherein the second
plug and the second outlet are aligned on the same plug-in body.

2 7. The water-sensing and protection apparatus of claim 1, further including a
self-test switch mounted on the enclosure, the activation of which causes the electrically
operated switch to open the electrical path between the second plug and the second outlet.

2 8. The water-sensing and protection apparatus of claim 1, further including a
warning light mounted on the enclosure which illuminates when the electrical path
between the second plug and the second outlet has been opened.

2 9. The water-sensing and protection apparatus of claim 1, further including
an audible alarm mounted on the enclosure which sounds when the electrical path
between the second plug and the second outlet has been opened.

2 10. The water-sensing and protection apparatus of claim 1, further including a
reset switch mounted on the enclosure, the activation of which causes the electrical path
between the second plug and the second outlet to be re-established if previously opened.

2 11. The water-sensing and protection apparatus of claim 1, wherein:
the electrically operated switch is a relay having a first set of contacts controlling
the electrical path between the second plug and the second outlet, and a second set of
4 contacts controlling the first set of contacts; and

the electrical components interface the sensors to the second set of contacts, such
6 that if any sensor is electrically shorted the relay trips causing the second set of contacts
to open the electrical path between the second plug and the second outlet.

12. The water-sensing and protection apparatus of claim 1, wherein the
2 electrical components interfacing the sensors to the second set of contacts includes a pair
of transistors arranged in a Darlington configuration.

13. Water-sensing and protection apparatus configured for use with a water-
2 utilization device such as a washing machine, dishwasher or other appliance having a first
plug for making connection to a first electrical outlet, the apparatus comprising:
4 a plurality of water sensors and at least one vibration sensor;
a second plug for making connection to the first electrical outlet;
6 a second outlet for receiving the first plug of the water-utilization device; and
an enclosure containing electrical circuitry, including:
8 a relay having a first set of contacts controlling the electrical path between
the second plug and the second outlet, and a second set of contacts controlling the
10 first set of contacts; and
electrical components interfacing the sensors to the second set of contacts,
12 such that if any sensor is electrically shorted the relay trips causing the second set
of contacts to open the electrical path between the second plug and the second
14 outlet.

14. The water-sensing and protection apparatus of claim 13, wherein one of
2 the water sensors is contained in a flattened housing for detecting the presence of water
on a floor.

15. The water-sensing and protection apparatus of claim 13, wherein the
2 vibration sensor includes two electrodes extending into a sealed cavity containing a slug

4 of mercury or other electrically conductive liquid and an adhesive or magnetic material
enabling the sensor to be attached to and oriented on an appliance.

2 16. The water-sensing and protection apparatus of claim 13, wherein the
second plug and the second outlet are aligned on the same plug-in body.

2 17. The water-sensing and protection apparatus of claim 13, further including
a self-test switch mounted on the enclosure, the activation of which causes the electrically
operated switch to open the electrical path between the second plug and the second outlet.

2 18. The water-sensing and protection apparatus of claim 13, further including
a warning light mounted on the enclosure which illuminates when the electrical path
between the second plug and the second outlet has been opened.

2 19. The water-sensing and protection apparatus of claim 13, further including
an audible alarm mounted on the enclosure which sounds when the electrical path
between the second plug and the second outlet has been opened.

2 20. The water-sensing and protection apparatus of claim 13, further including
a reset switch mounted on the enclosure, the activation of which causes the electrical path
between the second plug and the second outlet to be re-established if previously opened.